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ONE ARTICLE FROM OER'S ECONOMIC INTELLIGENCE WEEKLY REVIEW ENDING 15 DECEMBER 1978. REQUEST ARTICLE BE PASSED TO AMBASSADOR, DCM, ECONOMIC SECTION AND OTHER WORKING LEVEL STATE OFFICERS.

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COBALT: US DEPENDENCE ON OUTSIDE SUPPLIES (U).

1. DESPITE THE RISE IN US CONSUMPTION OF COBALT, PERSISTENT PRODUCTION PROBLEMS IN ZAIRE, AND GENERALLY TIGHTER WORLDWIDE SUPPLIES, WE ESTIMATE THAT THE UNITED STATES WILL BE ABLE TO MEET ITS 1979 NEEDS FOR COBALT OUT OF CURRENT GLOBAL PRODUCTION AND WILL NOT HAVE TO DIP INTO GOVERNMENT RESERVES (NOW AT A TWO-YEAR LEVEL). ASIDE FROM SCRAP, THE UNITED STATES RELIES ON IMPORTS FOR ALL ITS COBALT--A CRITICAL VULNERABILITY SINCE COBALT IS AN OFTEN IRREPLACEABLE ELEMENT IN THE HIGH-TEMPERATURE PARTS OF JET ENGINES AND TURBINES AND IN CUTTING TOOLS. (U)

KEY INDUSTRIAL APPLICATIONS.

2. COBALT IS ONE OF THE FEW CRITICAL METALS, DENIAL OF WHICH WOULD SEVERELY IMPEDE OUTPUT OF A WIDE RANGE OF IMPORTANT INDUSTRIAL PRODUCTS. IT IS NEARLY IRREPLACEABLE IN AN ESTIMATED 60 PERCENT OF ITS APPLICATIONS:
- - JET ENGINE PARTS - - SUPERALLOYS OF UP TO 65 PERCENT COBALT PROVIDE RESISTANCE TO STRESS AND HIGH TEMPERATURES.

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-- TOOLS, DIES, AND DRILL BITS--COBALT IMPARTS WEAR AND ABRASION RESISTANCE.

-- WELLHEAD AND PIPELINE VALVES AND SEAMLESS TUBING--ALLOYS OF UP TO 35 PERCENT COBALT ARE VITAL FOR HARDNESS, CORROSION RESISTANCE, AND PROTECTION AGAINST ABRASION AND HEAT BUILDUP.

-- CHEMICAL PROCESSING--COBALT SERVES AS A CATALYST IN PETROLEUM HYDROGENATION AND AS DRYING AGENT IN PAINTS. (U)

PARTICULAR SIGNIFICANCE TO THE UNITED STATES

3. COBALT HAS BEEN DESIGNATED AS ONE OF TWO CRITICALLY IMPORTANT MINERALS THAT POSE SERIOUS SUPPLY PROBLEMS TO THE UNITED STATES. (CHROMIUM IS THE OTHER.) THE MINERAL REVIEW COMMITTEE OF THE PRESIDENT'S NONFUEL MINERALS POLICY STUDY IN OCTOBER 1978 NOTED THAT:

-- AT PRESENT THE UNITED STATES HAS NO COBALT RESERVES (THAT IS, IDENTIFIED AND ECONOMICALLY MINEABLE DEPOSITS). TAKING INTO ACCOUNT RECOVERY FROM SCRAP, THE

UNITED STATES IS 97-PERCENT IMPORT RELIANT.

-- UP TO 80 PERCENT OF CURRENT US SUPPLY ORIGINATES IN AFRICA (IN 1977, 65 PERCENT FROM ZAIRE, INCLUDING 22 PERCENT TRANSSHIPPED THROUGH BELGIUM FOR FURTHER PROCESSING, AND 13 PERCENT FROM ZAMBIA); AFRICA ACCOUNTS FOR ABOUT 45 PERCENT OF WORLD OUTPUT.

--- ZAIRE AND ZAMBIA POSSESS NEARLY 40 PERCENT OF THE WORLD'S COBALT RESERVES.

-- COBALT IS OF CRITICAL IMPORTANCE TO US NATIONAL DEFENSE DUE TO ITS USE IN HIGH-TEMPERATURE PARTS OF JET ENGINES AND TURBINES AND AS A VITAL INGREDIENT IN CUTTING TOOLS. IN THESE APPLICATIONS, A SUITABLE SUBSTITUTE FOR COBALT OFTEN CANNOT BE FOUND, ESPECIALLY WHERE ULTRAFINE COBALT POWDER IS A NECESSITY; THE UNITED STATES RELIES ON BELGIUM FOR SOME 80 PERCENT OF ITS REQUIREMENTS OF COBALT ULTRAFINE POWDER. (U)

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US DEMAND INCREASING.

4. US CONSUMPTION OF COBALT, ABOUT 8,000 METRIC TONS IN 1977, HAS INCREASED IN RESPONSE TO EXPANDED DEMAND FROM THE AIRCRAFT INDUSTRY FOR SUPERALLOYS CONTAINING COBALT. WE ESTIMATE THAT 1978-79 DEMAND WILL RANGE BETWEEN 8,500 AND 10,000 TONS ANNUALLY, OR ROUGHLY ONE-THIRD OF TOTAL NON-COMMUNIST DEMAND FOR COBALT. THE USSR, WHICH NORMALLY IS ALMOST SELF-SUFFICIENT IN COBALT, TOGETHER WITH THE OTHER EUROPEAN COMMUNITIES COUNTRIES CONSUME A TOTAL OF 6,000 TO 7,000 TONS ANNUALLY. (U)

US SUPPLY AND STOCKPILE SITUATION.

5. DESPITE THE INCREASINGLY TIGHT WORLDWIDE COBALT SUPPLY, THE 200 TO 300 FIRMS THAT ACCOUNT FOR US COBALT CONSUMPTION HAVE MANAGED TO EXPAND OPERATIONS. EVEN WITH INTENSIFIED PRESSURE ON SUPPLY FOLLOWING THE MAY 1978 INVASION OF ZAIRE'S SHABA PROVINCE, US USERS OF COBALT WERE ABLE TO OBTAIN NEEDED SUPPLIES THROUGH SUPPLEMENTAL PURCHASES ON THE 'FREE' OR 'GRAY' MARKET WHICH CONSISTS OF SMALL INDEPENDENTS AND SPECULATORS. PRICES FOR SMALL-LOT FREE MARKET SALES OF COBALT HAVE SOARED FROM \$6.85 PER POUND PRIOR TO THE ZAIRE INVASION TO AN ESTIMATED \$50 PER POUND AT PRESENT. THE OFFICIAL PRODUCER PRICE OVER THE SAME PERIOD HAS TRIPLED TO \$20 PER POUND AND PROBABLY WILL GO HIGHER. (U)

6. US MANUFACTURING FIRMS HAVE EXPERIENCED LITTLE DIFFICULTY PASSING THROUGH THESE STIFF PRICE INCREASES TO THEIR CONSUMERS BECAUSE THE ADDED COST OF COBALT IS ONLY A SMALL FRACTION OF THE FINAL PRODUCT PRICE. FOR EXAMPLE, TRIPLING THE PRICE OF THE 200 POUNDS OF COBALT USED IN A JT-9 JET ENGINE ADDS LESS THAN 0.2 PERCENT TO THE \$2 MILLION FINAL PRODUCT COST. (U)

7. NO ONE KNOWS PRECISELY HOW MUCH COBALT IS HELD IN THE INVENTORIES OF US MERCHANTS AND PROCESSORS. THE BEST GUESS, BASED IN PART ON CONSUMER STOCKS REPORTED TO THE US BUREAU OF MINES IN AUGUST, IS THE TOTAL COMMERCIAL

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SUPPLIES DO NOT CURRENTLY EXCEED ONE OR AT MOST TWO MONTHS' REQUIREMENTS. SMALL QUANTITIES ALSO ARE HELD BY US DEALERS IN VARIOUS FREE POSTS OUTSIDE THE CONTINENTAL UNITED STATES. US COBALT CONSUMERS ARE TRYING TO HUSBAND THESE STOCKS THROUGH ECONOMIES OF ONE FORM OR ANOTHER--FOR EXAMPLE, CUTTING UNIT USAGE AND SAVING SCRAP FOR REPROCESSING. SOME ARE TAKING THE ULTIMATE STEP OF REPLACING COBALT WITH OTHER METALS, BUT THIS TAKES TIME, INVOLVES EXCEEDINGLY HIGH COSTS, AND DOES NOT ALWAYS GIVE FULLY EFFECTIVE TECHNICAL RESULTS. (U)

8. ULTIMATELY, IF THE UNITED STATES FACES SHORTAGES SUFFICIENT TO WARRANT A PRESIDENTIAL DECISION THAT THE NATIONAL SECURITY IS ENDANGERED, SUPPLIES WOULD BE DOLED OUT FROM US STRATEGIC STOCKS. THESE STOCKS, EQUAL TO APPROXIMATELY TWO YEARS' CONSUMPTION AT 1978 LEVELS, WERE ACQUIRED SEVERAL YEARS AGO AND PROBABLY WOULD REQUIRE SOME REPROCESSING TO MEET PRESENT SPECIFICATIONS. (C)

OUTLOOK FOR CONTINUED TIGHT SUPPLY.

9. WE BELIEVE THAT THE WORLD COBALT SUPPLY WILL REMAIN TIGHT OVER THE NEXT YEAR OR TWO, GIVEN THE LIKELIHOOD OF NAGGING PRODUCTION PROBLEMS IN ZAIRE. WE ASSUME THAT THE FRAGILE SECURITY NOW BEING MAINTAINED IN ZAIRE'S COBALT/COPPER MINING BELT WILL CONTINUE AND THAT, IF INSURGENTS MAKE OCCASIONAL FORAYS INTO THE AREA, THEY WILL SPARE VITAL COBALT FACILITIES SUCH AS THE REFINERIES IN LIULU AND LIKASI. (C)

10. ZAIRE'S COBALT INDUSTRY DID NOT SUSTAIN ANY APPRECIABLE PHYSICAL DAMAGE DURING THE 13 MAY INVASION; OUTPUT RESUMED SHORTLY THEREAFTER AT NEAR OR SLIGHTLY ABOVE THE IMMEDIATE PREINVASION LEVEL. LOSS OF THE 400 OR SO FOREIGN (MOSTLY BELGIAN) SPECIALISTS DID NOT PROVE TO BE AS SERIOUS A PROBLEM AS FORECAST BY EARLIER FIELD REPORTS, DUE IN PART TO THE REDUNDANCY OF MANY EXPATRIATES AND ALSO TO THE EXCEPTIONAL EFFORTS BY THE ZAIRIAN WORK FORCE TO DEMONSTRATE A GO-IT-ALONE CAPABILITY. EVEN THE ZAIRIANS, HOWEVER, RECOGNIZE THAT ADDITIONAL TECHNICIANS ARE NEEDED NOW TO COPE WITH

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INADEQUATE MAINTENANCE, SHORTAGES OF SPARE PARTS, AND AGED EQUIPMENT. PURCHASES OF SPARE PARTS--A CHRONIC BUT INCREASING PROBLEM--HAVE BEEN RESTRICTED BY GOVERNMENT LIMITATIONS ON THE FOREIGN EXCHANGE MADE AVAILABLE TO GECAMINES, THE STATE COMPANY RESPONSIBLE FOR OPERATING AND FINANCING THE COBALT FACILITIES. AN ESTIMATED \$100 MILLION IS NEEDED NOW TO REPLACE MAJOR EQUIPMENT AND TO PROVIDE THE REQUIRED INVENTORY OF SPARE PARTS EVEN IF ORDERS WERE PLACED IMMEDIATELY, HOWEVER, DELIVERIES WOULD STRETCH OUT OVER A YEAR OR MORE. IN THE INTERIM, PRODUCTION PROBLEMS WOULD CONTINUE; IN THE ABSENCE OF THESE APPENDITURES, SUCH PROBLEMS WILL REDUCE RECENT LEVELS OF OUTPUT. (C)

11. THE SHORTFALL IN ZAIRIAN COBALT OUTPUT NEXT YEAR IS NOT EXPECTED TO PRECIPITATE A GLOBAL SUPPLY CRISIS. PRODUCTION IN OTHER COUNTRIES COULD RISE BY 5,000 TONS. ZAMBIA ALONE IS PLANNING TO EXPAND OUTPUT BY ABOUT 2,000 TONS, ROUGHLY DOUBLING ITS CURRENT PRODUCTION RATE. OTHER ANTICIPATED INCREMENTS TO 1979 OUTPUT INCLUDE: NORWAY, 500 TONS; FINLAND, 500 TONS; CANADA, 770 TONS; SOUTH AFRICA, 160 TONS; AND JAPAN, POSSIBLY 1,000 TONS (USING ORES FROM THE PHILIPPINES). (U) (CONFIDENTIAL)RVW
15 DEC 98 DRV MULTIPLE BY 015319 WMINTEL.>

ORIG & AUTH: ASA/D/OER/NFAC [REDACTED]

REL: CH, NFAC/CS

[REDACTED]; CL BY 015319.

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